

PORTABLE GRILL WITH FOLD OUT WHEELS

TECHNICAL FIELD OF THE INVENTION

(0001) The present invention is directed to grills, and more specifically to outdoor grills that are portable.

BACKGROUND OF THE INVENTION

(0002) Camping and tailgating are popular recreational activities enjoyed by many. Some people camp so that they may enjoy the outdoors, and others use camping as an inexpensive alternative to staying in hotels. Tailgating is a great way to meet and eat before ballgames, and has become quite the ritual for many season ticket holders.

(0003) Although many campers enjoy being in the outdoors, often campers like to enjoy the luxuries of home while camping. For example, many campers bring lounge chairs or hammocks, portable air mattresses or cots, and similar accoutrements to make a camping experience more comfortable.

(0004) One thing that most individuals enjoy while camping or tailgating is cooking on a grill or campstove. Typically, at home, an individual is accustomed to the luxuries of an indoor stove and a large outdoor grill. However, many conventional grills are bulky and oversized, so

their portability and thus use for camping or tailgating is limited.

(0005) The assignee of the present invention, The Coleman Company, Inc., has addressed the portability of grills by its product sold under the trademark "ROADTRIP." The ROADTRIP grill is a highly portable gas grill (a charcoal model is also available) that folds to a compact configuration for transport and storage. The ROADTRIP grill includes a separate base having legs. The legs fold into the base for compact storage.

SUMMARY OF THE INVENTION

(0006) The following presents a simplified summary of some embodiments of the invention in order to provide a basic understanding of the invention. This summary is not an extensive overview of the invention. It is not intended to identify key/critical elements of the invention or to delineate the scope of the invention. Its sole purpose is to present some embodiments of the invention in a simplified form as a prelude to the more detailed description that is presented later.

(0007) An embodiment of the invention provides fold out wheels for a portable grill. A separate handle may also be provided that folds out from the grill so that a user may grasp the handle and pull the grill about on the wheels.

(0008) In accordance with an embodiment, the wheels may be moved from a first position in which they are stored underneath the grill to a second position in which they extend outward from the grill and are locked so that the grill may be transported with the wheels in this configuration. In an embodiment, when the wheels are in the second position, the wheels and an edge of the grill can support a grill at a tilted configuration so that a user may easily grasp the handle. In an embodiment, the handle extends upward and is

located at a height so that it may be easily grasped by a user.

(0009) In accordance with an embodiment, the wheels and handle are mounted on a base that is separate from the grill. The base may also include legs that fold outward to support the grill.

(0010) In accordance with an embodiment, legs provided on the grill may be folded underneath the grill, and the wheels may be folded within the legs. In addition, the handle may be folded into and stored within the folded legs.

(0011) Other features of the invention will become apparent from the following detailed description when taken in conjunction with the drawings, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

(0012) FIG. 1 is a side perspective view of a base for a grill in accordance with the present invention with a grill shown in phantom mounted on top of the base;

(0013) FIG. 2 is an exploded side perspective view of the base of FIG. 1;

(0014) FIG. 3 is a bottom view of the base of FIG. 1, with legs folded under the base;

(0015) FIG. 4 is a front view of the base of FIG. 1, with a grill mounted thereon, showing steps for storage of the legs under the base;

(0016) FIG. 5 is a partial cut-away side perspective view of a latching mechanism that may be used to attach to the grill of FIG. 4 to the base;

(0017) FIG. 6 is a side perspective view, similar to FIG. 5, showing the latching mechanism in a closed or attached position;

(0018) FIG. 7 is a front view of the base and grill of FIG. 4 showing the base in a folded configuration and wheels and a handle extended;

(0019) FIG. 8 is a side perspective view of a wheel for the base of FIG. 1; and

(0020) FIG. 9 is a partial cut-away side perspective view of the wheel of FIG. 8.

DETAILED DESCRIPTION

(0021) In the following description, various embodiments of the present invention will be described. For purposes of explanation, specific configurations and details are set forth in order to provide a thorough understanding of the embodiments. However, it will also be apparent to one skilled in the art that the present invention may be practiced without the specific details. Furthermore, well-known features may be omitted or simplified in order not to obscure the embodiment being described.

(0022) Referring now to the drawings, in which like reference numerals represent like parts throughout the several views, FIG. 1 shows a side perspective view of a base 22 incorporating an embodiment of the present invention. The base 22 is configured to be utilized with a grill 20, shown in phantom in FIG. 1, and shown in detail in FIGS. 4 and 7.

Although shown as used with a particular grill, the base 22 may be used with many different cooking devices. To this end, as used herein, "grill" is meant to mean grills, stoves, griddles, or any other cooking device having a fire box; i.e., a chamber that contains a fire. As such, a "grill" as used herein typically includes some type of fuel source, such as propane, charcoal, wood burning, gas, and the like. The grill

20 shown in the drawings includes a firebox 24 having a lid 25, and control knobs 26 for controlling the flow of fuel to a cooking surface (not shown). However, other configurations for a grill may be used. An example of such a grill is disclosed in commonly owned United States Design Patent No. D464,843.

(0023) Although the base 22 is shown separate from the firebox 24 in the drawings, in accordance with an embodiment of the invention, many or all of the features of the base 22 could be incorporated with or formed integrally to the firebox 24. However, for the particular embodiment disclosed, the base 22 is formed separately from the firebox 24 so that the firebox 24 may be utilized without the base 22, permitting the firebox 24 to be placed, for example, on a table.

(0024) The base 22 provides further functionality for the grill 20 in that it includes legs 28, 30 for supporting the grill 20 at a height at which a user may easily access the firebox 24 for cooking. In the embodiment shown, the legs 28, 30 are mirror images of one another, so only a single one, leg 28, is described here. The leg 28 includes a lower pedestal 32. The lower pedestal 32 is attached to a lower section 34 of the leg 28, and lower rods 36, 38 extend upward from the lower pedestal 32. An upper section 40 of the leg 28 includes

upper rods 42, 44. Detents 46, 48 are provided on the distal ends of the upper rods 42, 44. The lower rods 36, 38 fit into the upper rods 42, 44, and can slide into the upper rods 42, 44 for storage (FIG. 2). The detents 46, 48 are released (e.g., depressed) to permit the sliding action. Other configurations may be used for the legs 28, 30.

(0025) A spring clip 47 is attached to a bottom side 52 of the base 22, and includes arms 49 (FIG. 2) at distal ends. The ends of the arms 49 extend into slots 50 in the upper rods 42, 44 when the legs 28 are in an outwardly extended position such as is shown in FIGS. 1 and 2.

(0026) To store the legs 28, 30 the detents 46, 48 are depressed. The spring clip 47 is released from the slots 50 and is positioned against the underside of the base 22, for example by rotating the spring clip 47 until the arms 49 of the two spring clips 47 are adjacent to one another (FIG. 3). The lower rods 36, 38 of one of the legs 28, 30 are pressed upward into the upper rods 42, 44 (FIG. 4.). The shortened leg 28 or 30 may then be folded under the base 22, as is shown by the arrow in FIG. 4. This process can be repeated with the other side, so that the two legs 28, 30 are stored underneath the base 22 as is shown in FIG. 3. In the embodiment shown in the drawings, the legs 28, 30 are recessed under the base 22

for compact storage.

(0027) The base 22 thus far described is known in the art, and has been sold with assignee's ROADTRIP grills. However, in accordance with an embodiment of the invention, a handle 60 is provided on the base 22. The handle 60 is configured to lock underneath the base 22, for example in a clip 61 (FIG. 3), and to release from the clip 61 and to rotate about a pin 62, in the direction shown in the drawing in FIG. 4. The pin 62 may, for example, be the same pin about which the leg 28 rotates. In addition, the handle 60 may be received within and between the upper rods 42, 44 when the legs 28, 30 and the handle 60 are stored, such as is shown in FIG. 3.

(0028) In accordance with an embodiment of the invention, fold out wheels 70 are provided on the base 22. The fold out wheels 70 are mounted at the end of wheel legs 72. A locking mechanism 74 is provided for locking the fold out wheels 70 underneath the base 22 (i.e., in the stored position). The locking mechanism 74 may also releasably lock the fold out wheels 70 in the deployed position. The locking mechanism 74 releasably locks the fold out wheels 70 under the base 22, and, for example, may be a spring-biased latch, a catch, a lock, a latch, or other mechanism that is capable of

holding the fold out wheels 70 in place.

(0029) In accordance with an embodiment, as shown in FIG. 8, the fold out wheels 70 and wheel legs 72 are attached to the base 22 by a U-shaped bracket 76. The U-shaped bracket 76 includes two ends having rounded outer edges 78. Two notches 80 are cut into the outer edges 78. A fixed pin 82 extends through each wheel leg 72, creating protrusions on either side of each wheel leg 72. A sliding pin 86 extends through each wheel leg 72 toward the distal end of the wheel leg 72 and through slots 88. A spring 90 is connected to the fixed pin 82 and the sliding pin 86, and biases the sliding pin 86 toward the fixed pin 82.

(0030) For storage, the fold out wheels 70 are positioned such as is shown in FIGS. 3 and 8. The protrusions on the fixed pin 82 extend into a first set of notches 80 on the rounded outer edge 78 of the U-shaped bracket 76. The engagement of the protrusions on the fixed pin 82 and the notches 80 permits the fold out wheels 70 from releasing and moving relative to the base 22. Thus, this engagement of the protrusions on the fixed pin 82 and the notches 80 serves as the mechanism that releasably locks the fold out wheels 70 under the base.

(0031) When the fold out wheels 70 are positioned as

shown in FIGS. 3 and 8, the fold out wheels 70 are folded underneath the bottom side 52 of the base 22 and are received within a bottom portion of the base 22 for efficient storage. Thus, both the handle 60 and the fold out wheels 70 may be conveniently stored underneath the base 22.

(0032) To move the fold out wheels 70 to a transport position, a user grasps one of the fold out wheels 70 and pulls outward on the fold out wheel 70 relative to the U-shaped bracket 76. Pulling out on the fold out wheel 70 causes the sliding pin 86 to move along the slot 88 against the bias of the spring 90. When the fold out wheel 70 has been pulled out an adequate amount, the protrusion on the fixed pin 82 releases from the notch 80, and the user is free to rotate the wheel leg 72 and the fold out wheel 70 about the sliding pin 86.

(0033) In accordance with an embodiment of the invention, an additional notch 92 is provided on a second location around the rounded outer edge 78. The second notch 92 is for locking the fold out wheel 70 and the wheel leg 72 in a transport position, shown in FIG. 7. A user, once rotating the wheel leg 72 so that the protrusions on the fixed pin 82 reach the notch 92, may release the fold out wheel 70 and it will lock into place by the protrusions on the fixed

pin 82 engaging the notch 92.

(0034) In accordance with an embodiment of the invention, as shown in FIG. 7, when the fold out wheels 70 are in a transport position, the grill 20 and the base 22 may be supported by placing the grill 20 and base 22 on the fold out wheels 70 and an outer edge 96 of the base 22. This feature permits the grill 20 and the base 22 to be positioned in the manner shown in FIG. 7, wherein the handle 60 is presented upward and outward for easy grasping by a user. A user may grasp the handle 60 and lower it, along with the outer ends of the base 22 and the grill 20 slightly downward so that the combined weights of the grill 20 and the base 22 are solely on the fold out wheels 70. At this position, the user may roll the grill 20 and the base 22 to a desired location. The user may then raise the handle 60 to place the grill 20 back in the upright position shown in FIG. 7 or may store the handle 60 and the fold out wheels 70 so that the grill 20 and base 22 may be stored, or the legs 28, 30 may be folded outward to position the grill 20 in a upright position.

(0035) As described above, the handle 60 may be folded out for use. If desired, a catch, such as a spring clip 98 (FIG. 3) may be provided for locking the handle 60 in the outer position. Another mechanism, such as a stop, a spring,

or a hook may be used to releasably lock the handle 60 in the outer position.

(0036) In accordance with an embodiment of the invention, the firebox 24 and the base 22 include two latching mechanisms 100 (one of which is shown in FIGS. 5 and 6) for releasably locking the firebox 24 onto the base 22. The latching mechanisms 100 are located on the sides of the firebox 24, but may alternatively be placed in other locations, and may not be directly attached to the firebox at all. Each latching mechanism 100 may be any structure that temporarily locks the firebox 24 to the base 22, including, but not limited to, hook and loop fasteners, ties, hooks, snaps, locks, and catches.

(0037) In accordance with an embodiment shown in the drawing, the latching mechanism 100 includes a bracket 102 attached to the base 22 and having teeth 104 extending outward from the top portion. The latching mechanism 100 further includes a spring latch 108 attached to the firebox 24. The spring latch 108 includes a base 110 having a pair of indentations 112 on outer edges and a handle 114 that bends around and upward.

(0038) To install the firebox 24 on the base 22, a user may simply press the firebox 24 down onto the base 22.

To this end, the teeth 104 include an inclined front surface 116 that engages a bottom edge 118 of the spring latch 108 to move the spring latch 108 outward as the firebox 24 is lowered. A user aligns the spring latch 108 with the bracket 102 in a position similar to the position shown in FIG. 5. The user then lowers the firebox 24. When the firebox 24 has been lowered an amount so that the teeth 104 engage the indentations 112, the spring latch 108 snaps inward to lock the bottom edge of the indentations 112 underneath the bottom edge of the teeth 104 (FIG. 6). The firebox 24 is then locked into position on the base 22.

(0039) To release the latching mechanism 100, a user simply pulls outward on the handle 114, releasing the indentations 112 from underneath the teeth 104. The handle 114 is preferably located so that it may be grasped by a user who extends hands on opposite sides of the firebox 24. In this manner, the user may release the latching mechanisms 100 and lift the firebox 24 at the same time.

(0040) If desired, the latching mechanism 100 of the present invention may be reversed, in that the bracket 102 may be mounted on the grill 22, and the spring latch 108 may be mounted on the base 22. In addition, as described, other mechanisms may be used for releasably locking the firebox 24

onto the base 22.

(0041) Thus, in accordance with an embodiment, the firebox 24 and base 22 are easily transported utilizing the handle 60 and the fold out wheels 70. Moreover, as described above, these features may be provided on the bottom of the firebox 24, without use of a separate base 22. In either event, the fold out wheels 70 and the handle 60 provide a convenient way to transport the grill 20.

(0042) If the firebox 24 and the base 22 are provided as separate components, the latching mechanism 100 provides a convenient way for releasably locking the two components together. Also, in accordance with an embodiment, the latching mechanism 100 is arranged so that a user may grasp latching mechanisms 100 on opposite sides of the firebox 24 and the base 22 at the same time the user grasps the firebox 24 to lift the firebox 24 from the base 22. This feature permits a one step operation of release of the firebox 24 from the base 22 and lifting of the firebox 24 from the base 22.

(0043) The use of the terms "a" and "an" and "the" and similar referents in the context of describing the invention (especially in the context of the following claims) are to be construed to cover both the singular and the plural, unless otherwise indicated herein or clearly contradicted by

context. The terms "comprising," "having," "including," and "containing" are to be construed as open-ended terms (i.e., meaning "including, but not limited to,") unless otherwise noted. The term "connected" is to be construed as partly or wholly contained within, attached to, or joined together, even if there is something intervening. Recitation of ranges of values herein are merely intended to serve as a shorthand method of referring individually to each separate value falling within the range, unless otherwise indicated herein, and each separate value is incorporated into the specification as if it were individually recited herein. All methods described herein can be performed in any suitable order unless otherwise indicated herein or otherwise clearly contradicted by context. The use of any and all examples, or exemplary language (e.g., "such as") provided herein, is intended merely to better illuminate embodiments of the invention and does not pose a limitation on the scope of the invention unless otherwise claimed. No language in the specification should be construed as indicating any non-claimed element as essential to the practice of the invention.

(0044) Preferred embodiments of this invention are described herein, including the best mode known to the inventors for carrying out the invention. Variations of those

preferred embodiments may become apparent to those of ordinary skill in the art upon reading the foregoing description. The inventors expect skilled artisans to employ such variations as appropriate, and the inventors intend for the invention to be practiced otherwise than as specifically described herein. Accordingly, this invention includes all modifications and equivalents of the subject matter recited in the claims appended hereto as permitted by applicable law. Moreover, any combination of the above-described elements in all possible variations thereof is encompassed by the invention unless otherwise indicated herein or otherwise clearly contradicted by context.